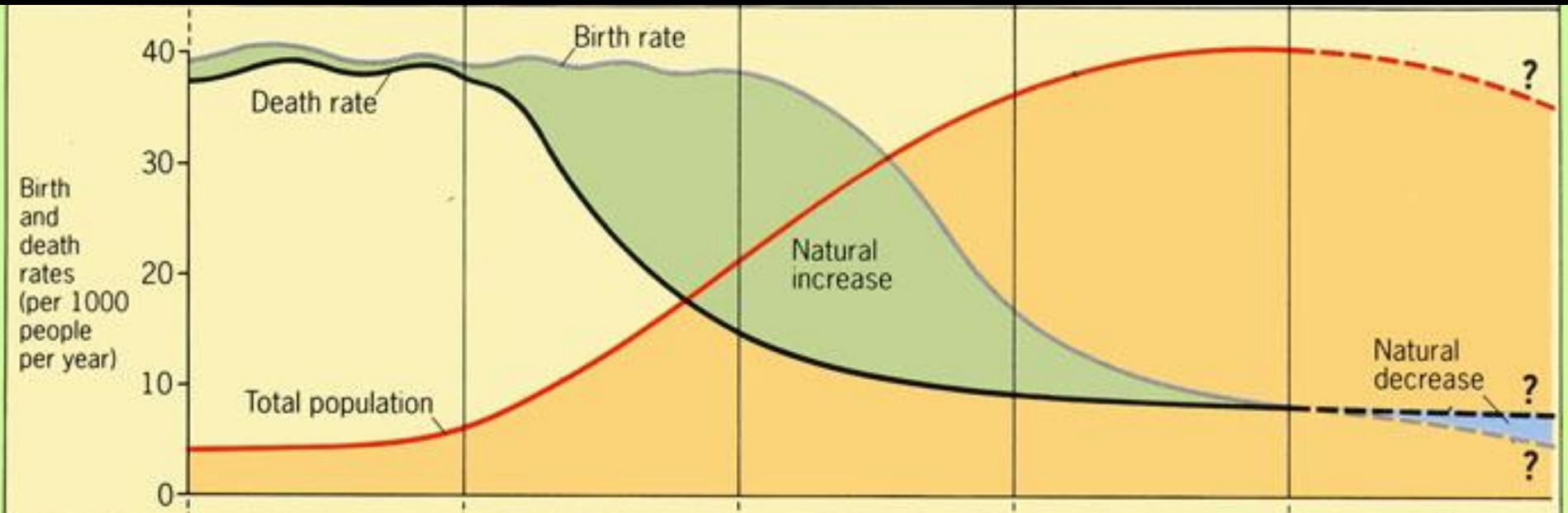
Demographic Transition Model & Age Structure Diagrams

{Human Population

Demographic Transition Model

- The Demographic Transition Model is a model that proposes how populations should change over time in terms of their birth rates, death rates and total population size.
- shows pop. chgs. in birth/death rates, and size
- explains how pop. chgs. from high to low birth/death rates
- developed ctrys. --started early (18th c.) and continues
- less developed ctrys--started later, continues today
- The demographic transition model explains the transformation of countries from having high birth and death rates to low birth and death rates.
- In developed countries this transition began in the 18th century and continues today.
- Less developed countries began the transition later and many are still in earlier stages of the model.

Demographic Transition Model



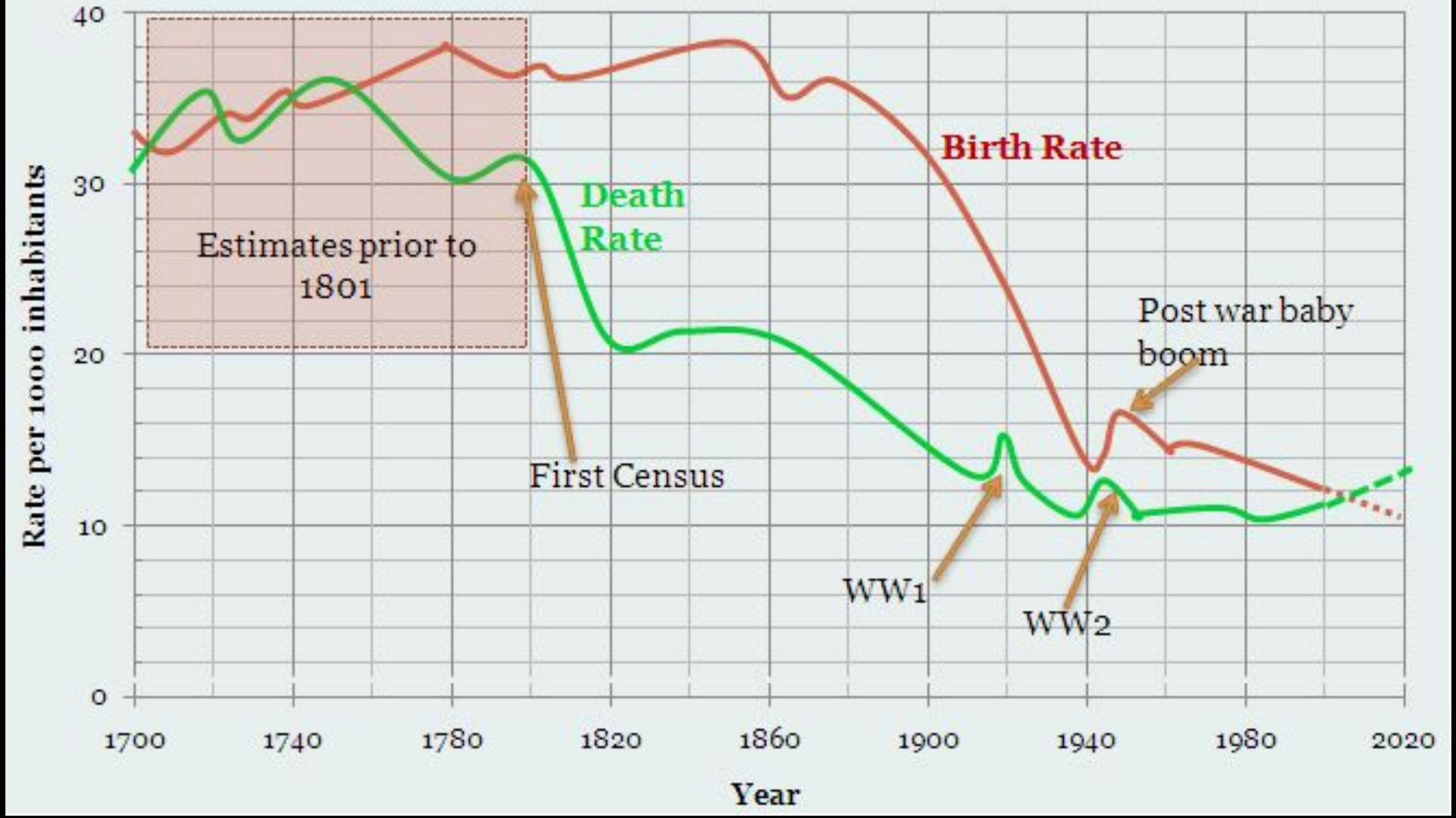
Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	

Stages

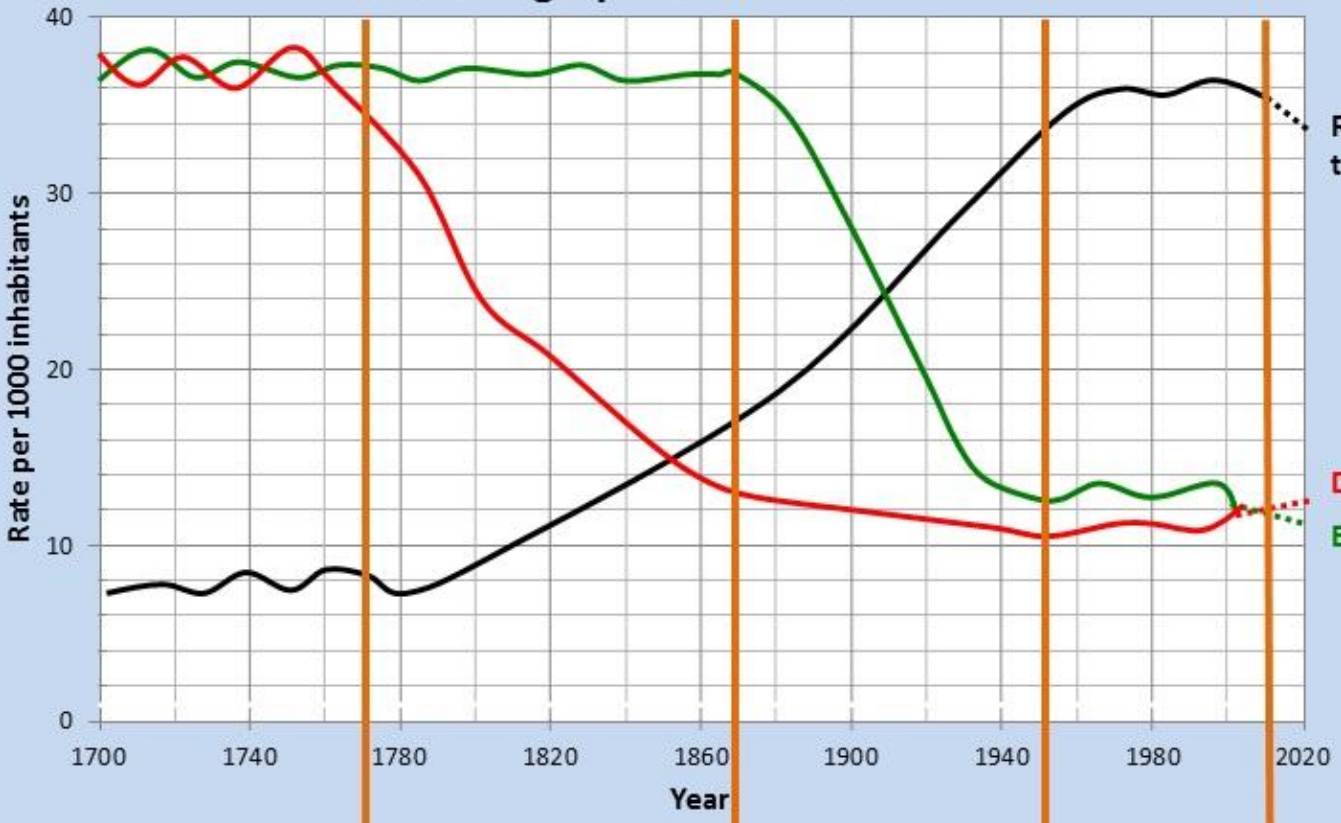
It originally consisted of 4 stages, and a fifth stage has been added.

- In stage 1 both the birth rate and death rates are high and fluctuating
- In stage 2 the Birth rates stay high throughout because improvements in society affected death rate first.
- In stage 3 birth rates finally begin to fall and become almost on a par with death rates
- In stage 4 both death rates and birth rates remain low and fluctuate, giving a steady population.
- A final stage has been added to the model, based upon recent countries experiences.

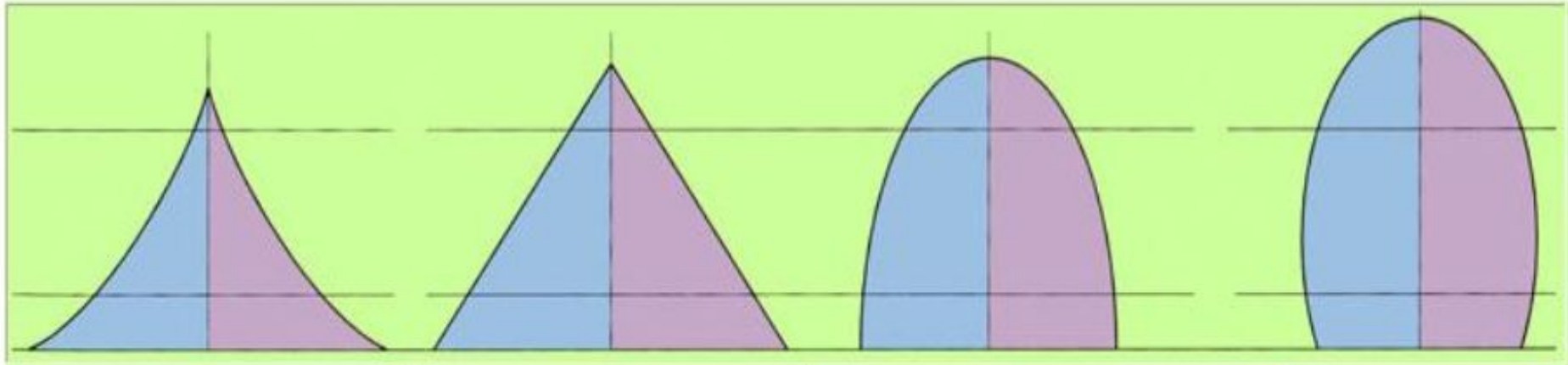
Britain's Demographic Transition from 1700 onwards



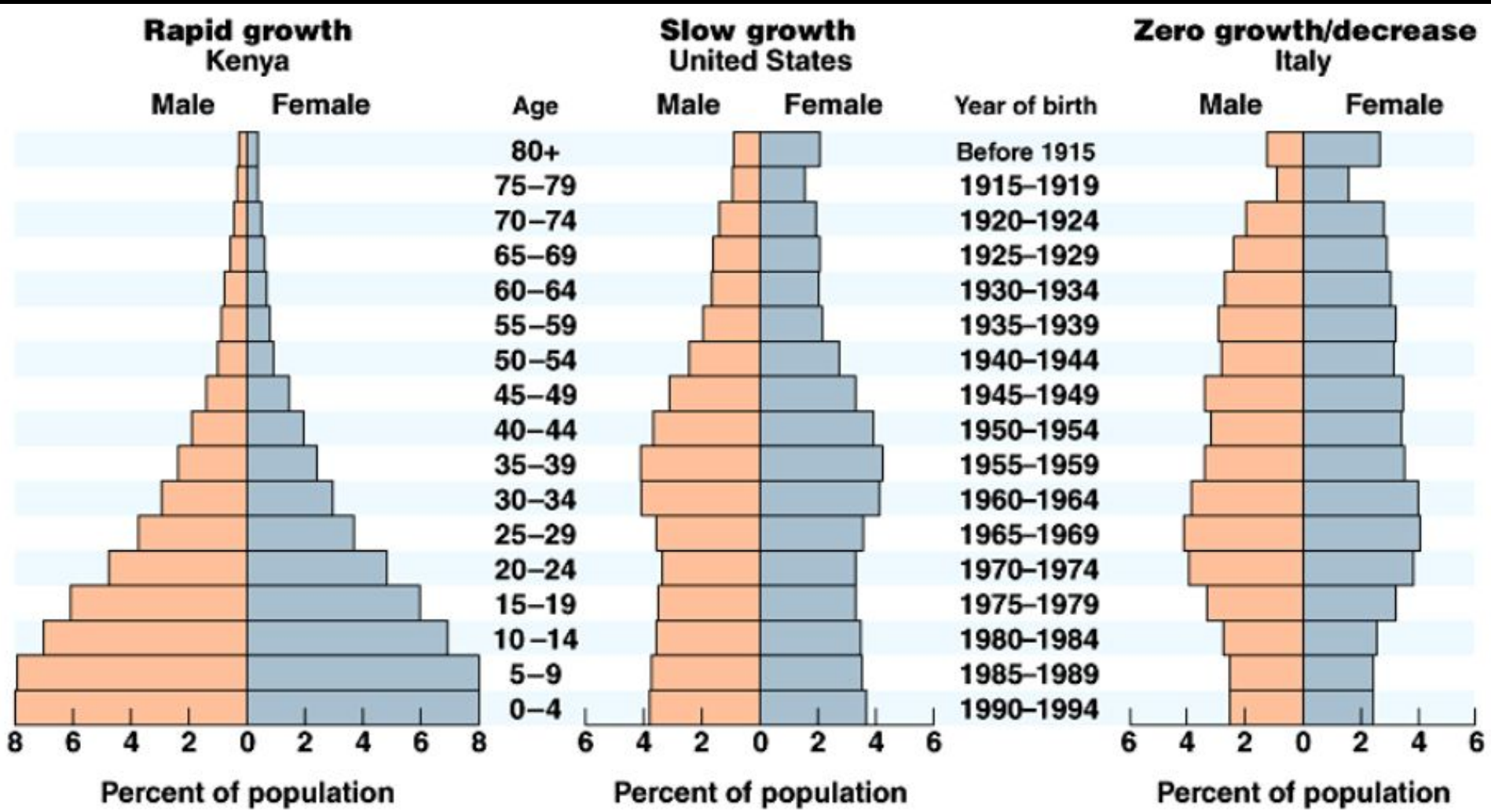
The Demographic Transition Model

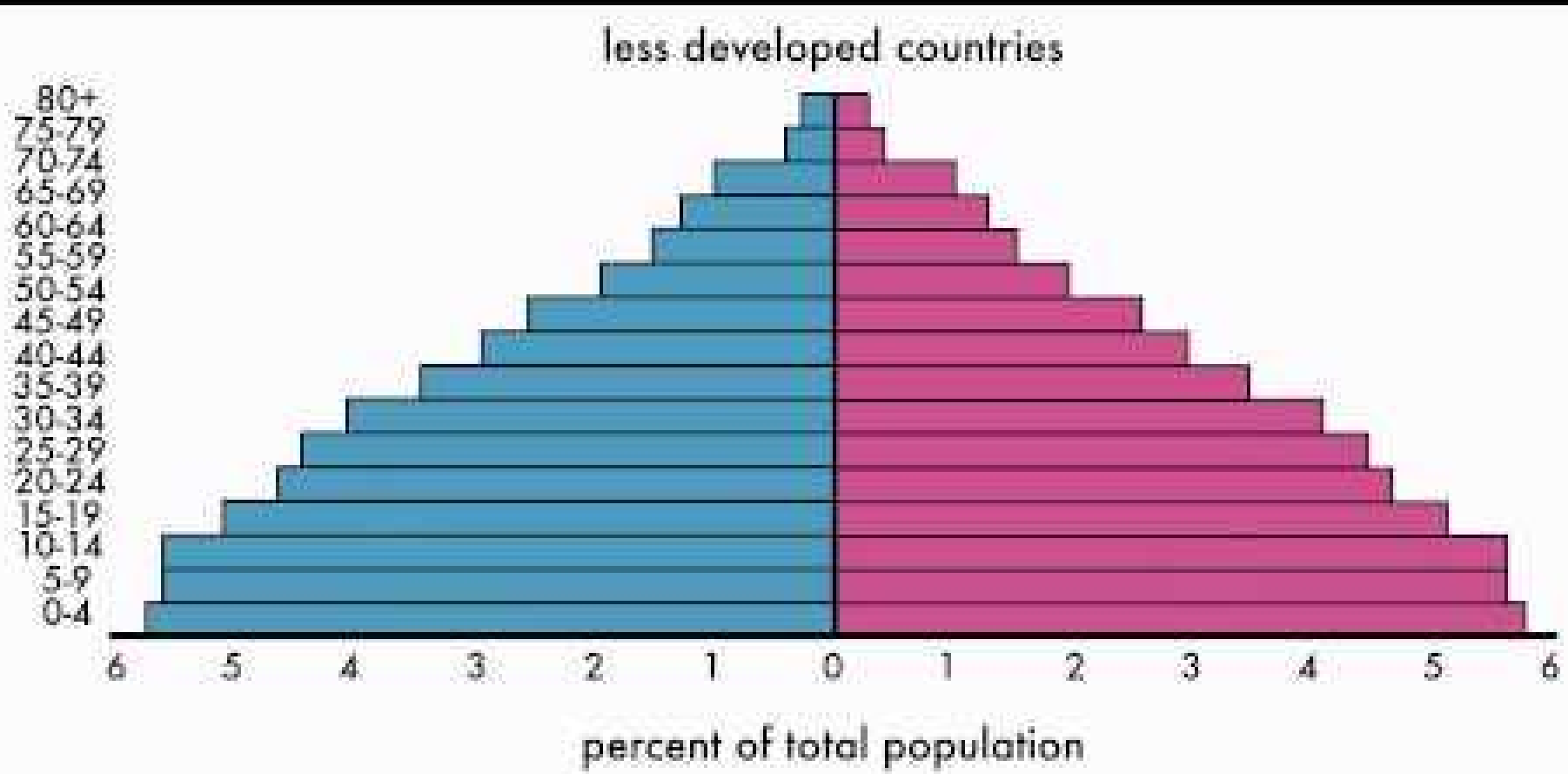


Stage 1 – High fluctuating	Stage 2 – Early expanding	Stage 3 – Late expanding	Stage 4 – Low fluctuating	Stage 5 – Decline?
UK pre 1760	UK 1760 to 1870	UK 1870 to 1950	Post 1950	Soon?
Amazon Basin tribes	Ethiopia	India	UK	Russia
Population Pyramid shape				



Stage 1	Stage 2	Stage 3	Stage 4
Expansive.	Expansive.	Stationary.	Contractive.
Concave sides.	Straight sides.	Convex sides.	Convex sides.
High birth rate.	Still high birth rate.	Declining birth rate.	Low birth rate.
High death rate.	Falling death rate.	Low death rate.	Low death rate.
Short life expectancy.	Slightly longer life expectancy.	Long life expectancy.	Longer life expeactancy.
Rapid fall in each upward age group due to high DR.	Fall in DR so more people living into middle age.	An increasing proportion of the population is in the 65+ age group.	Higher dependency ratio.





population pyramids

Simulation

Use the computer and go to this website. Answer the following questions.
http://www.learner.org/courses/envsci/interactives/demographics/demog.html

1. Change the country to Japan, make the birthrate as close to 1 per woman, and the death rate as close to 1.5 as possible. press play. Describe what happens to the graph and what it looks like.
2. Change the country to America, make the birthrate as close to 1.8 per woman, and the death rate as close to 2.0 as possible. press play. Describe what happens to the graph and what it looks like.
3. Pick a country and your birthrate and death rate. Write them down. Describe what happens to the graph and what it looks like.